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# CRANE-FLIES OF JAPAN

23

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## REPORT ON A COLLECTION OF JAPANESE CRANE-FLIES (TIPULIDAE) WITH A KEY TO THE SPECIES OF PTYCHOPTERA

CHARLES P. ALEXANDER  
ITHACA, N. Y.

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REPORT ON A COLLECTION OF JAPANESE CRANE-FLIES (TIPULIDÆ), WITH A KEY TO THE SPECIES OF PTYCHOPTERA.

BY CHARLES P. ALEXANDER, ITHACA, N.Y.\*

An extensive collection of Japanese crane-flies, taken by Dr. S. I. Kuwana and assistant entomologists in the vicinity of Nishigahara, Tokio, Japan, during the season of 1912, was forwarded to me for examination. The material, alcoholic, is contained in 62 vials, very carefully prepared and with complete data. I express my sincere thanks to Dr. Kuwana and his assistants for this fine representation of Japanese Tipulidæ and Ptychopteridæ.

*Family Ptychopteridæ*

*Genus Ptychoptera* Meigen.

*Key to the species of Ptychoptera.*

1. Wings with a distinct brown cross-band along the cord . . . . . 2  
Wings hyaline or subhyaline without a distinct brown cross-band along the cord.
2. Radial sector more than twice as long as the radio-median cross-vein. (Europe) . . . . . *contaminata* L.  
Radial sector rarely longer than the radio-median cross-vein. . . 3
3. Posterior metatarsus conspicuously white.  
(Europe) . . . . . *albimana* Fabr.  
Posterior metatarsus not white.
4. Pleuræ reddish yellow; a short brown cross-band near the middle of the radial cell. (East. U.S.) . . . . . *rufocincta* O.S.  
Pleuræ black; no brown cross-band near the middle of the radial cell . . . . . 5
5. All coxæ yellow or reddish-yellow; scape of antennæ brownish-yellow or yellow. . . . . 6

\* Contribution from the Entomological Laboratory of Cornell University.

- Fore coxæ yellowish, other coxæ black; scape of antennæ black. (Japan)..... *japonica*, sp. n.
6. Scutellum yellow. (Europe)..... *lacustris* Meig.  
Scutellum black..... 7
7. Abdomen with the basal third of the second segment and the basal one-half of the third segment reddish orange. (India)..... *distincta* Brun.  
Abdomen entirely black. (Europe)..... *paludosa* Meig.
8. Femora and tibiæ bright orange-yellow, tarsi coal-black. (Abdomen orange-yellow, tergites with blackish borders to the segments; sternites orange-yellow.) (India)..... *atrirtarsis* Brun.  
Femora and tibiæ more or less black or brown; tarsi not coal-black..... 9
9. Pleuræ silvery-white..... 10  
Pleuræ not white. Thorax different in colour in the two sexes; femora bright yellow, hind pair black on the basal two-thirds except the extreme base. (India)..... *tibialis* Brun.
10. Hind coxæ black except at tip; femora brown at tip; scutellum reddish; hypopygium large, reddish; first segment of the antennæ reddish. (West. U.S.)..... *lenis* O. S.  
Coxæ and femora yellow, the latter black at the tip; scutellum yellow; hypopygium small, mostly blackish; antennal scape black. (Europe)..... *scutellaris* Meig.

*Ptychoptera japonica*, sp. n.

Wings banded; radial sector very short; antennæ of the male very long, about as long as the body; abdomen with little reddish or yellowish colour.

Male.—Length, 8.5 mm; wing, 8.9 mm; antennæ, 8.4 mm.; fore leg, femur, 5.4 mm.; tibia, 5.4 mm.; tarsus, 8 mm.; middle leg, femur, 5.4 mm.; tibia, 5.1 mm.; tarsus, 7 mm. Hind leg, femur, 6.1 mm.; tibia, 6.8 mm.; tarsus, 6.3 mm.

Female.—Length, 11.5–13.5 mm.; wing, 10.7–10.8 mm. Fore leg, femur, 5.6–5.8 mm.; tibia, 5.1–5.4 mm.; tarsus, 7 mm. Middle leg, femur, 5.4 mm.; tibia, 5.4 mm.; tarsus, 6.8 mm. Hind leg, femur, 6.2 mm.; tibia, 6.8 mm.; tarsus, 6.2 mm.

Male.—Rostrum and palpi light brownish-yellow; front and vertex very dark coloured, occiput similar. Antennæ, segment one black, segment two black at base, brown apically, segment three yellowish on basal half, black apically, remainder of antennæ black; antennæ very long, as long as the body; segments one and two short, the third segment very long, segments 4 to 15 long, gradually shortening, terminal segment very short.

Thoracic pronotum deep bluish-black; mesonotum, including the pleuræ similar. Halteres rather pale dull whitish. Fore legs with yellow coxa, dark at base, yellow trochanter, yellow femur broadly tipped with blackish, yellow tibia narrowly tipped with blackish, metatarsus yellowish-brown—darkened into brownish-black at the tip, remaining tarsal segments brownish black; middle and hind legs similar, but their coxæ blackish and the black femoral tips narrower. Wings with cell C yellowish brown, Sc and R more yellowish, remainder of wing hyaline or nearly so, a brown mark at the base of the wing in the neighbourhood of cross-vein h, a cross-band at the cord, often irregular, often a rounded brown spot on vein Cu<sub>1</sub> midway between cross-vein m-cu and the tip of the vein, brown marks at end of vein R<sub>1</sub>, fork of R<sub>4+5</sub> and fork of M. Venation (see plate III., fig. 7); Rs very short, much shorter than cross-vein r-m, basal deflection of R<sub>4+5</sub> short but distinct, about one-half as long as Rs, cross-vein m-cu long, curved, longer than the basal deflection of Cu<sub>1</sub>, placed opposite or very slightly beyond cross-vein r-m.

Abdomen, 1st segment very short, 2nd a little longer than the 4th, 3rd very long, as long as the succeeding 4 segments combined, segments 4–8 successively shorter. Abdomen dark brownish black, basal half of segment 4 orange. Hypopygium, 8th tergite narrow, short, widely separated from the somewhat broader 8th sternite, 9th tergite viewed from above very deeply incised, this incision rectangular, the caudad projecting lateral lobes are somewhat swollen basally, narrowed behind, slightly enlarged at the tips, densely clothed with long black hairs, between the lateral arms is a small rounded lobe, directed caudad; the 9th pleurite reaches the 8th tergite, the 9th tergite and 9th sternite being more widely separated; the 9th tergite is triangular,

its apex rounded, bearing a long slender appendage at its tip on the inner side, this appendage long, slender and curved proximad so that each touches its mate of the opposite side, these appendages thickly clothed with long black hairs. The 9th sternite is very high at its base, extending up beyond the ventral level of the 8th tergite, its caudal ventral margin strongly chitinized, produced caudad and dorsad into a long slender arm, just dorsad of which is a shorter, strongly chitinized arm, with five or six blunt teeth on the ventral face. The guards of the penis are separated except at the base, divergent, chitinized, slender, rather blunt at the end, but the outer angle produced distad into a long slender arm. (See pl. IV., fig. 12-16).

*Female*.—Similar to the male, with the following exceptions: Antennae short; black on tips of femora even more extensive, in fore femur covering almost one-half of the segment; tibiae almost uniformly brown. Abdomen, tergites 1 to 6 dark brown; segment 7 brown, apical third white; 8th tergite mostly whitish; sternum lighter brown. 9th tergite, blade-like, pointed; 9th sternite short, produced into a short lobe on its dorsocaudal angle; ovipositor chestnut-brown. (See pl. IV.; fig. 11.)

Vial No. 29, Tokyo, Japan; May 7, 1912. 1 ♂, 5 ♀.

Holotype.—Male, Tokyo, Japan; May 7, 1912.

Allotype.—Female, with the type.

Paratypes.—Four females, with the type.

Types in the author's collection.

Paratypes in the U. S. National Museum and Cornell University collections.

*Family Tipulidae*

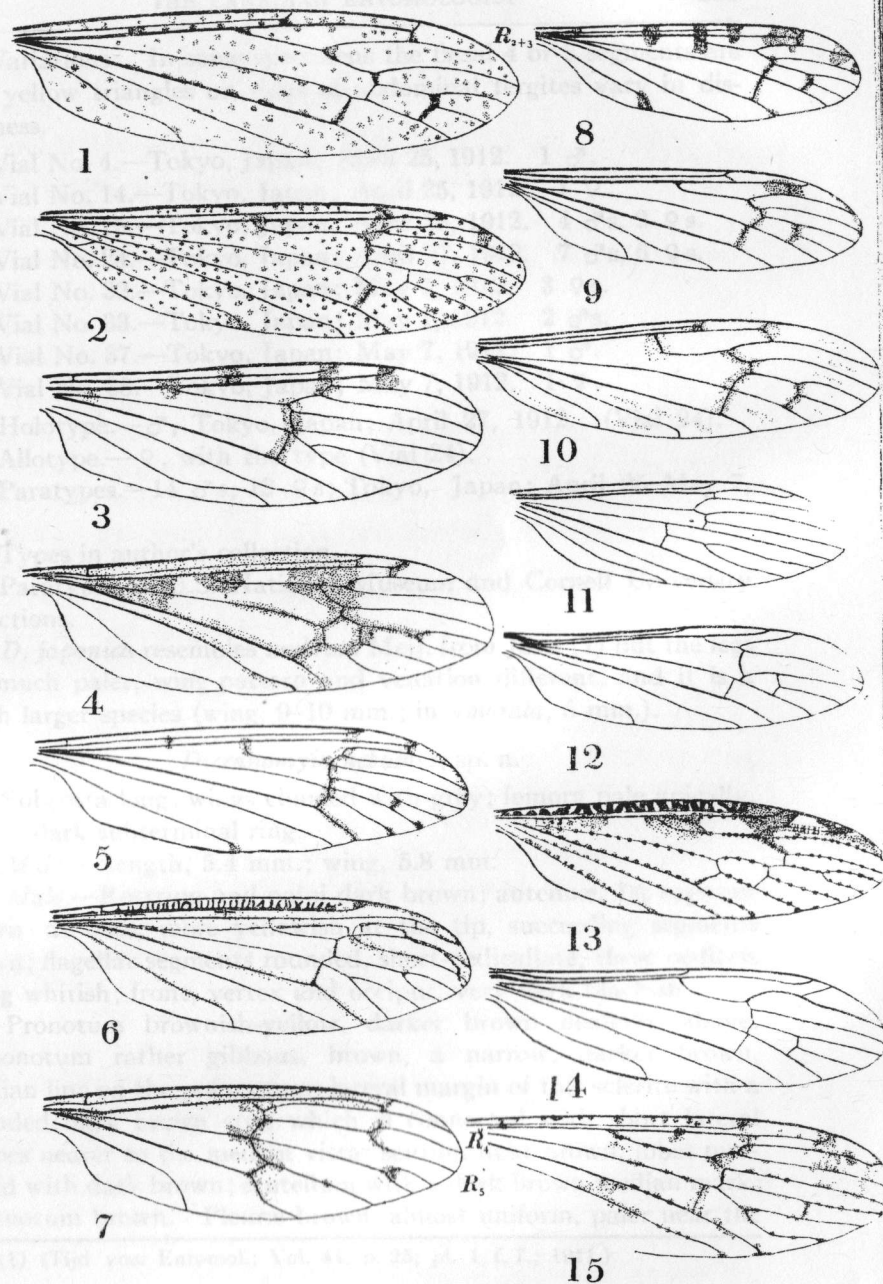
*Tribe Limnobiini.*

*Genus Dicranomyia* Stephens.

*DICRANOMYIA JAPONICA*, sp. n.

Subcosta long; wings with a distinct stigma and faint clouds along the cord; femora tipped with brown.

*Male*.—Length, 9-9.4 mm; wing, 9.4-10 mm; antennae 3.2 mm. *Female*: Length, 10.2-11.4 mm; wing, 9.3-10.6 mm.



*Male*.—Rostrum and palpi brown; antennæ, segments 1 and 2 pale whitish yellow; segment 3 yellowish basally, brown at tip; remainder of antennæ dark brown. Antennæ long; flagellar segments long, cylindrical, subequal in length. Front, vertex and occiput, dark brown; genæ lighter colored, more yellowish.

Pronotum dark brown medially, yellowish on sides; mesonotal præscutum light yellow, with a broad, conspicuous median brown stripe; scutum with the lobes dark brown, paler medially; scutellum dark brown, except the narrow median incision on the anterior margin; post-notum largely dark brown. Pleuræ dull light yellow, the mesopleuræ suffused with brownish. Halteres rather long, pale, knob a little darker. Legs, coxæ and trochanters light yellow, femora dull yellow, the tip brown; tibiæ dull yellow, tip scarcely darker; tarsi, segment 1 dull brownish yellow basally, darkening to brown on apical third; remainder of tarsi brown. Wing pale brownish yellow, costal and subcostal cells rather clearer yellowish; veins brown; a conspicuous brown stigma; very pale grey clouds along the cord, outer end of cell 1st  $M_2$ , and at origin of Rs. Venation see fig; Sc long, ending before fork of Rs,  $Sc_2$  longer than  $Sc_1$ , at the tip; Rs long arcuated at origin sometimes with a spur. (See pl. III.; fig. 9.)

Abdomen, tergites largely brown, usually with a yellow triangle on the anterior portion of the sides of the sclerites; sternite yellow; 8th and 9th, brown; 8th tergite, with caudal margin pale, straight; 9th tergite, with caudal margin strongly convex; with a brown median mark. Pleural pieces short, triangular, very broad at base, narrowed apically; dorsal apical appendage short, cylindrical, narrowed at tip, its inner or caudal margin provided with 4-5 rounded teeth. Ventral arm a small, rounded, little chitinized lobe, covered with long hairs; guard of the penis very long, pale, projecting beyond the apical appendages, bifid at tip with 2 slightly chitinized divergent horns, these horns directed ventrad; 2nd gonapophyses, slender, much shorter than the penis guard, scarcely enlarged at end, but inner face produced into a short, indistinct tooth. (See pl. IV.; fig. 10.)

Female about as in the male; valves of the ovipositor rather long, the tergal valves much longer than the sternal valves.

Variations: In some specimens the basal 4 or 5 segments are pale; yellow triangles on sides of abdominal tergites vary in distinctness.

Vial No. 4.—Tokyo, Japan; April 25, 1912. 1 ♂.

Vial No. 14.—Tokyo, Japan; April 25, 1912. 1 ♀.

Vial No. 15.—Tokyo, Japan; April 25, 1912. 4 ♂s, 2 ♀s.

Vial No. 24.—Tokyo, Japan; April 27, 1912. 7 ♂s, 6 ♀s.

Vial No. 32.—Tokyo, Japan; May 7, 1912. 3 ♀s.

Vial No. 33.—Tokyo, Japan; May 7, 1912. 2 ♂s.

Vial No. 37.—Tokyo, Japan; May 7, 1912. 1 ♂.

Vial No. 38.—Tokyo, Japan; May 7, 1912. 1 ♀.

Holotype.—♂, Tokyo, Japan; April 27, 1912. (Vial 24).

Allotype.—♀, with the type (Vial 24).

Paratypes.—14 ♂s; 12 ♀s; Tokyo, Japan; April 25–May 7, 1912.

Types in author's collection.

Paratypes in U.S. National Museum and Cornell University collections.

*D. japonica* resembles *umbrata* Meij. from Java (1) but the legs are much paler, wing-pattern and venation different, and it is a much larger species (wing, 9–10 mm.; in *umbrata*, 5 mm.).

*Dicranomyia nebulosa*, sp. n.

Subcosta long; wings clouded with grey; femora pale apically, with a dark subterminal ring.

*Male*.—Length, 5.4 mm.; wing, 5.8 mm.

*Male*.—Rostrum and palpi dark brown; antennæ, 1st segment brown at base, more yellowish at the tip, succeeding segments brown; flagellar segments rounded, short-pedicellate, these pedicels being whitish; front, vertex and occiput, very dark blackish.

Pronotum brownish-yellow, darker brown medially above. Mesonotum rather gibbous, brown, a narrow, darker brown, median line on the præscutum; lateral margin of this sclerite with a rounded dark brown spot which is connected with short lateral stripes nearer to the median vitta; scutum light brown, lobes margined with dark brown; scutellum with a dark brown median mark; postnotum brown. Pleuræ brown, almost uniform, paler near the

sternum. Halteres pale. Legs, coxæ and trochanters light yellow; femora light brown, becoming light yellow on the apical sixth and with a conspicuous, dark-brown, subapical ring; tibiæ dark brown; tarsi broken. Wings, whitish or subhyaline; costal cell slightly more yellowish; grey clouds as follows: At origin of Rs (largest), at stigma, at tip of Sc, along cord, along outer end of cell 1st M<sub>2</sub> and in the center of most of the cells. Venation, (see pl. III.; fig. 10); Sc long, extending far beyond the origin of Rs, Sc<sub>2</sub> at the tip of Sc<sub>1</sub>, Rs almost square at its origin and spurred (in the types), cell R<sub>2</sub> almost as far proximad as cell 1st M<sub>2</sub> (as in *F. stulta* O.S.), cell 1st M<sub>2</sub> long, longer than the veins issuing from it, basal deflection of Cu<sub>1</sub> at the fork of M.

Abdomen, tergum dark brown; caudal margins of the 7th, 8th and 9th segments more yellowish; sternum dull yellow. Hypopygium (see figs. 8, 9; pl. IV.); 9th tergite short, its cephalic and caudal margin convex, its caudal half provided with a number of long hairs. Pleuræ very long, cylindrical, the tips produced into a slender lobe on the ventral side; two apical appendages, which are very short and inconspicuous, being scarcely one-third as long as the plura; dorsal appendage simple, short, slender and subchitinized, not exceeding the ventral appendage; ventral appendage double, its dorsal arm being small, triangular and with the caudal or outer face bearing a chitinized tooth, its tip produced entad and cephalad into a blunt lobe; the ventral arm is produced entad into a small lobe, with the tip evenly rounded. Viewed from the side, the pleura is broad, its ventral margin rounded at the base, at the middle of its length produced into a spatulate fleshy lobe which is directed caudad. The guard of the penis is long (extending about to the extreme tip of the pleura), and slender, broad at the base, narrowed toward the tip, the end little, if any, enlarged; the apex is very slightly notched; viewed from the side, it is seen that the extreme tip is bent ventrad; viewed from above, the guard seems to be concave, its lateral margins being more strongly chitinized. The second gonapophyses are rather long, dark brown, subrounded or scarcely pointed at the apex; at their base they are about as broad as the base of the penis guard; the lateral margin of the apophyse is produced dorsad into an incurved, chitinized flap or

margin, which, on the sides, protects the short, slightly emarginate anal tube.

Vial No. H.—Tokyo, Japan; Aug. 1912. 1 ♂.

Holotype, ♂.—Tokyo, Japan; Aug. 1912.

Type in the author's collection.

*D. nebulosa* resembles *unibrata* Meij. (Java), but the leg-pattern and venation are quite different.

Genus *Geranomyia* Haliday.

*Geranomyia avocetta*, sp. n.

Wings spotted; thoracic dorsum brown, the humeral portions of the præscutum yellow; tibial apices not blackened.

*Male*.—Length, excluding the proboscis, 7.5–7.7 mm.; proboscis, 3–3.6 mm.; wing, 7.8–7.9 mm.

*Male*.—Proboscis and palpi dark brown, the former more yellowish basally; antennæ, basal segments dark brown, flagellar segments somewhat lighter brown, segments rounded-oval; front, vertex and occiput dark-colored, almost black.

Pronotum dark brown; in the paratypical specimen, the caudal margin of the scutum and the scutellum, yellowish. Mesonotal præscutum with a broad, dark brown, median line, widened behind; humeral angles conspicuously light yellow, behind darkening into brown of a lighter shade than the broad median vitta; scutum with the lobes dark brown, median line paler; scutellum and postnotum brown. Pleuræ dull brownish-yellow, clearer below. Halteres pale, knob a little browner. Legs: Coxæ and trochanters light yellow, the latter margined with black at the tip; femora and tibiæ light brown, scarcely darkened at their tips; terminal tarsal segments darker brown. Wings, hyaline or nearly so, the costal cells and veins more tawny; veins light brown, darker brown where traversed by dark markings; seven brown marks along the costal margin, the third at the origin of Rs extending down almost to vein M; the fourth at the tip of Sc extending down into cell 1st R<sub>1</sub>; the 5th (stigmatal) spot, largest, rectangular; the sixth and seventh spots at ends of veins R<sub>2+3</sub> and R<sub>4+5</sub>; cord and outer end of cell 1st M<sub>2</sub> seamed with brown; a brown spot at ends of most of the veins, most distinct and largest at the 2nd anal vein. Venation (see pl. III.; fig. 8): Sc long, ending nearer to the fork of Rs than to

origin;  $Sc_2$  at tip of  $Sc_1$ ;  $R_s$  long, nearly three times as long as the basal deflection of  $R_{4+5}$ ; basal deflection of  $Cu_{1.1}$  at fork of  $M$ .

Abdominal tergum brown, anterior margins of the basal segments somewhat more yellowish; sternum pale whitish-yellow. Hypopygium (see figs. 5-7; pl. IV.): 8th tergite short, consisting only of a narrow ring, almost straight on its cephalic margin, concave on the caudal margin; 9th tergite convex anteriorly, concave on caudal margin. Pleural pieces very short, cylindrical, not more than twice as long as wide, bearing two apical appendages. The dorsal appendage is a short, slender, strongly curved hook, sharp pointed and more chitinized at its tip; it is directed entad, cephalad and dorsad. The ventral lobes are long, fleshy, between two and three times as long as the pleura and much thicker; at their base, on the inner side, is a short, fleshy tooth, more chitinized at its tip, directed cephalad and dorsad and meeting its mate of the opposite side on the median line; near the tip, on the outer or caudal face, are two, long, slender, subequal bristles, directed caudad. The ventral side of the pleura is produced into a lobe, enlarged apically and directed entad and slightly caudad. The guard of the penis is short, extending slightly beyond the most caudad-projecting portion of the pleura; it is swollen at the base, less so in the middle of its length, its tip small, chitinized, bifid at apex, the tip directed slightly ventrad. The second gonapophyses are very short, and, viewed from above, barely project beyond the fleshy lobe lying between them.

Vial No. 8.—Tokyo, Japan; April 25, 1912. 1 ♂.

Vial No. 49.—Tokyo, Japan; August, 1912. 1 ♂.

Holotype, ♂.—Vial No. 8.

Paratype, ♂.—Vial No. 49.

Types in the author's collection.

*G. avocetta*, compared with the four Javan species described by de Meijere, agrees most closely with *G. montana*, which, however, has the wing-pattern much less distinct. From the North American *G. rostrata* Say, it differs conspicuously in its unicolorous tibiae.

*Genus Rhipidia* Meigen.

*Rhipidia pulchra septentrionis*, subsp. n.

This subspecies differs from typical *pulchra* Meij.\* (Java) in

\*Neue und bekannte sudasiatische Dipteren; p. 92, fig. 7. Bijdragen tot de Dierkunde, vol. 17, 1904.

antennal coloration, the flagellar segments being alternately dark and light-coloured; segments, 4, 6, 8, 10 and 12 are whitish, the remainder of the antennæ brown. The wings have a large spot at the base of  $Cu$  and the venation is not as figured by de Meijere. (Compare fig. 1; pl. III.)

*Female*.—Length, 7.6-8.6 mm.; wing, 7.4 mm.

Vial No. 10.—Tokyo, Japan; April 25, 1912. 2 ♀s.

Holotype and Paratype in author's collection.

In *Tijd Voor Entomol.*, Vol. 44, p. 27, figs. 14-16, de Meijere refers this to *Dicranomyia*. However, I believe his original reference of the species to be the correct one—this belief based on venational hypopygial characters.

*Tribe Antochini*

*Genus Rhamphidia* Meigen.

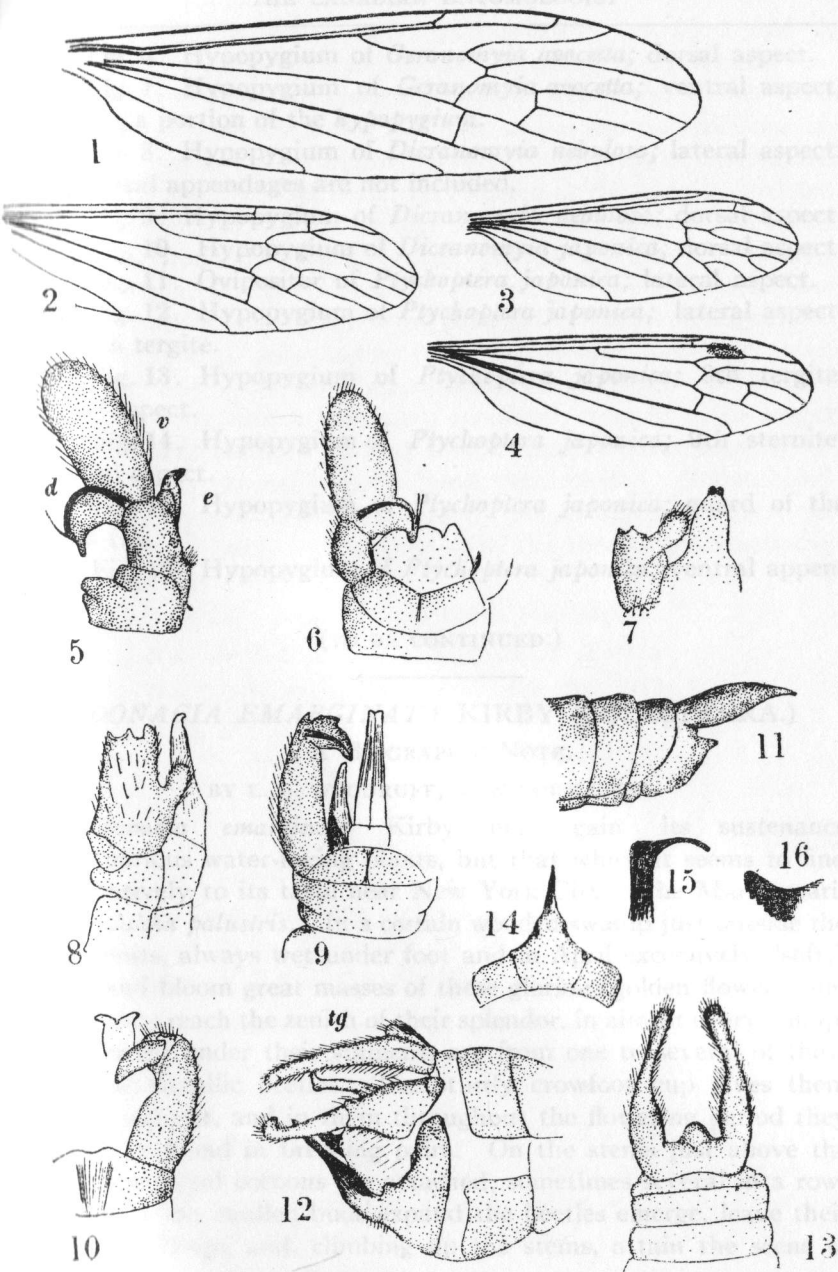
*Rhamphidia nipponensis*, sp. n.

Rostrum short; palpi pale; wings hyaline without darker marks.

*Female*.—Length, 8.9 mm.; wing, 7.8 mm.; middle leg, femur, 6.6 mm.; tibia, 7 mm.; tarsus, 6.7 mm.

*Female*.—Rostrum light brown; labrum light yellow; palpi light brownish-yellow; antennæ brown, flagellar segments cylindrical with short black bristles not exceeding the segment in length, the outer segments not conspicuously narrowed; front, vertex, occiput and genæ dark brown.

Pronotum dark brown, mesonotal præscutum light brown, with three broad, darker brown stripes, the median one longest, broadest, very dark brown in front; the lateral stripes begin behind the pseudosutural fovea and cross the suture, suffusing the lobes of the scutum; scutum medially light brown, on margins yellowish-brown; scutellum brown, margined with yellowish; postnotum brown. Pleuræ brownish-yellow, suffused with brown on portions of the mesopleuræ; mesosternum brown. Halteres light yellow, knob slightly darker, brown. Legs: coxæ light yellow, tipped with pale brown; trochanters yellow; femora yellowish-brown, rather clearer yellowish basally; tibiae brown, tarsi brown, terminal segments rather darker. Wings, hyaline or nearly so; veins brownish



JAPANESE CRANE-FLIES (ALEXANDER).

yellow, stigma not indicated. Venation (see fig. 1; plate IV.); cross-vein r-m distinct; basal deflection of *Cur* beyond the fork of *M*.

Abdomen, tergum and sternum dark brown; ovipositor light yellow.

Vial No. 28.—Tokyo, Japan; April 26, 1912. 1 ♀.

Holotype, ♀.—Vial No. 28, in author's collection.

This species differs from the European *R. longirostris* by its shorter rostrum, cylindrical flagellar segments with short bristles; pale maxillary palpi and other colorational differences, which may, of course, vary in series.

## EXPLANATION OF THE PLATES.

## PLATE III.

Fig. 1. Wing of *Rhipidia pulchra septentrionis*, sub sp. n.

Fig. 2. Wing of *Limnophila japonica*, sp. n..

Fig. 3. Wing of *Erioptera elegantula*, sp. n.

Fig. 4. Wing of *Limnophila satsuma* Westwood.

Fig. 5. Wing of *Tricyphona vetusta*, sp. n.

Fig. 6. Wing of *T. kuwanai*, sp. n.

Fig. 7. Wing of *Ptychoptera japonica*, sp. n.

Fig. 8. Wing of *Geranomyia avocetta*, sp. n.

Fig. 9. Wing of *Dicranomyia japonica*, sp. n.

Fig. 10. Wing of *D. nebulosa*, sp. n.

Fig. 11. Wing of *Molophilus pegasus*, sp. n.

Fig. 12. Wing of *Gonomyia insulensis*, sp. n.

Fig. 13. Wing of *Conosia irrorata* Wiedemann.

Fig. 14. Wing of *Gonomyia superba*, sp. n.

Fig. 15. Wing of *Erioptera asymmetrica*, sp. n.

## PLATE IV.

Fig. 1. Wing of *Rhamphidia nipponensis*, sp. n.

Fig. 2. Wing of *Limnophila inconcussa*, sp. n.

Fig. 3. Wing of *Tricyphona insulana*, sp. n.

Fig. 4. *Liogma kuwanai*, sp. n.

Fig. 5. Hypopygium of *Geranomyia avocetta*; lateral aspect. e—penis guard; d—dorsal apical appendage; v—ventral apical appendage.



Fig. 6. Hypopygium of *Geranomyia avocella*; dorsal aspect.

Fig. 7. Hypopygium of *Geranomyia avocella*; ventral aspect, showing a portion of the *hypopygium*.

Fig. 8. Hypopygium of *Dicranomyia nebulosa*; lateral aspect.

The apical appendages are not included.

Fig. 9. Hypopygium of *Dicranomyia nebulosa*; dorsal aspect.

Fig. 10. Hypopygium of *Dicranomyia japonica*; dorsal aspect.

Fig. 11. Ovipositor of *Ptychoptera japonica*; lateral aspect.

Fig. 12. Hypopygium of *Ptychoptera japonica*; lateral aspect. tg—9th tergite.

Fig. 13. Hypopygium of *Ptychoptera japonica*; 9th tergite, dorsal aspect.

Fig. 14. Hypopygium of *Ptychoptera japonica*; 9th sternite, ventral aspect.

Fig. 15. Hypopygium of *Ptychoptera japonica*; guard of the penis (?).

Fig. 16. Hypopygium of *Ptychoptera japonica*; ventral appendage.

(TO BE CONTINUED.)

### DONACIA EMARGINATA KIRBY (COLEOPTERA.)

#### A BIOGRAPHIC NOTE.

BY L. B. WOODRUFF, NEW YORK CITY.

*Donacia emarginata* Kirby may gain its sustenance from various water-loving plants, but that which it seems to find superlatively to its taste near New York City is the Marsh-marigold, *Caltha palustris*. In a certain wooded swamp just outside the city limits, always wet under foot and in April excessively "soft," grow and bloom great masses of these glorious golden flowers; and when they reach the zenith of their splendor, in almost every clump, half buried under their stamens, are from one to several of these graceful metallic beetles. The sturdy crowfoot cup gives them secure support, and in them throughout the flowering period they are to be found in breeding pairs. On the stems just above the roots the pupal cocoons are attached, sometimes several in a row; but when the swollen buds expand the beetles emerge, leave their lowly dwellings, and, climbing up the stems, attain the scene of

July, 1913

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BY CHARLES P. ALEXANDER, ITHACA, N.Y.

(Continued from Page 210.)

*Gonomyia (Gonomyia) superba*, sp. n.

Antennæ, brown; color, brown and yellow; vein, *Sc* ends slightly beyond the origin of *Rs*.

*Male*.—Length, 5–5.5 mm.; wing, 4.9 mm.

*Female*.—Length, 5.9 mm.; wing, 5.2–5.5 mm.

*Male*.—Rostrum yellow, palpi brown; antennæ brown, including the basal segments; front, vertex and occiput dull yellow, the vertex clearer yellow behind.

Pronotum, clear light yellow above; on the sides, a short, dull brown stripe from the cervical sclerites down to above the fore coxa. Mesonotum, præscutum very light yellowish brown, with rich chestnut-brown stripes, a median stripe, broad and dark in front, narrow behind, and again enlarged at its end divided by a pale, narrow, median stripe; lateral stripes short, beginning behind the pseudosutural pits crossing the transverse suture and suffusing the lobes of the scutum; lateral edge of the præscutum, in front, yellowish; behind, brown; scutellum pale, whitish; the base and lateral edges tinged with brownish, post notum brown. Pleuræ clear yellowish white, an irregular dark brown mark behind and above the base of the coxa; sternum yellow, the sides of the mesosternum, between the fore and middle legs, brown, separated by a broad median pale mark; the propleural stripe begins on the prosternum as a rounded mark which sends out a narrow caudal prolongation. Halteres light yellow. Legs: coxæ and trochanters light yellow, margins of the segments more or less brown; femora and tibiæ light brown; tarsi somewhat darker brown. Wings, hyaline or nearly so; veins brown, costa more yellowish. Venation (see fig. 14, pl. III): *Sc* ending slightly beyond the origin of *Rs*; basal deflection of *Cu*<sup>1</sup> about at the fork of *M*.

Abdomen, tergum, light yellow, each segment with a large brown mark on basal half, the caudal margin of this mark much

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rounded; sternum light yellow. Hypopygium (see fig. 1 and 2, plate X). Pleurites short and broad, the caudal end produced into one fleshy and three chitinized appendages, as follows: Viewed from above, a fleshy lobe in front, the inner dorsal margin produced entad and dorsad into a slightly curved slender spine; behind the fleshy lobe arises a stout hook, very strong at the base, constricted before the middle, the tip slender and pointed, this hook directed entad and caudad; from the outer ventral angle of the pleurite arises a long, straight chitinized appendage, directed entad and caudad, narrow basally and more enlarged apically. The guard of the penis is long, pale, ending in a long, slender, tube-like point. On either side of the penis guard arises an elongate, very slender, chitinized hook, which is straight for about three-fifths its length and then bent strongly inward; viewed from the side, these hoops are bent very strongly ventrad and then caudad. Summarized, the hypopygium bears eight chitinized slender arms, all except two (which are probably homologous with the second gonapophyses) being borne by the pleurites.

*Female*.—Very similar to the male, but larger.

Vial No. 1.—Tokio, Japan; Aug. 1912. One ♂.

Vial No. 5.—Nishigahara, Japan; Apr. 25, 1912; 5 ♂, 4 ♀.

Holotype, ♂; Vial No. 1.

Allotype, ♀; Vial No. 5.

Paratypes, 5 ♂, 3 ♀; Vial No. 5.

Types in author's collection; Paratypes in U.S. National Museum and Cornell University Collections.

*G. superba* differs from *nubeculosa* Meij. (Java). (Tijd. voor Entomol., vol. 44, p. 48, 49; fig. 36, 1911) in the unspotted wings; from *metatarsata*, (l.c., p. 48, fig. 35) in its closed cell 1st M<sub>2</sub>, etc.

*Gonomyia (Leiponeura) insulensis*, sp. n.

Pleuræ without longitudinal stripes; vein *Sc* ends far before the origin of *Rs*.

*Female*.—Length, 3.9–4 mm.; abdomen, 2.6 mm.; wing, 4 mm.

*Female*.—Rostrum yellow, palpi brown; antennæ, segment one yellowish, remainder dark brown; front, vertex and occiput yellow, the vertex suffused with dark colored.

Mesonotal præscutum yellowish, with three brown stripes, the median one broad, not divided by a pale median vitta, extending to the suture, the lateral stripes are broad, narrow, uniform in width until they cross the suture (not expanded behind), lateral margin of the sclerite dull yellow, the ground color between the brown stripes is very reduced; scutum, lobes dark brown, median line yellowish; scutellum yellow, a brown median spot in front; postnotum brown. Pleuræ, mesopleuræ brown in front, extending from the lateral margin of the præscutum down to and suffusing the mesosternum on the sides; metasternum pale brown. Halteres dull yellow. Legs: coxæ and trochanters yellow, suffused with brown in front; femora, tibiæ and tarsi brown, a little darker toward the tip. Wings subhyaline, veins brown. Venation (see fig. 12, plate III); *Sc*. ending far before the origin of *Rs*; *R*<sup>2+3</sup> almost parallel to *R*<sup>1</sup>.

Abdominal tergites yellowish-brown; sternites light yellow.

Vial No. F.—Tokio, Japan; August, 1912; 1 ♀.

Holotype, ♀; in Vial F.

Type in author's collection.

The three species of *Gonomyia* described by de Meijere as *Atarba* (Tijd. voor Entomol.; vol. 44, 1911) are all members of the subgenus *Leiponeura* Skuse. These species are *Gonomyia nebulosa* (l.c., p. 42, fig. 25); *pilifera* (l.c.; p. 43, fig. 26) and *diffusa* (l.c.; p. 43, 44). They have nothing in common with *Atarba* and are quite distinct from any members of the *Leiponeura* group, that I know of, in their clouded wings. *G. insulensis* differs from all of the above species in its unmarked wings.

Genus *Erioptera* Meigen.,

Subgenus *Acyphona* Osten-Sacken.

Of this subgenus, two species were included, both of which are herein characterized as new. The only described Palearctic species, *Acyphona maculata* Meigen, of Europe, differs from the Japanese species, as follows: Wing pattern, in *maculata* large, rounded brown markings mostly with grey centers; the body-shade is much lighter in *maculata* and there are several important differences in hypopygial characters, these being shown by the following key: